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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/804,926 | 03/19/2004 | Kasra Khazeni | KLAP1679US | 8219 |
| 53537 | 7590 | 09/08/2006 | EXAMINER | |
| CAVEN & AGHEVLI LLC 9249 S. BROADWAY BLVD. UNIT 200-201 HIGHLANDS RANCH, CO 80129 | | | DETSCHER, MARISSA | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2877 | |

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/804,926

Applicant(s)

KHAZENI ET AL.

Examiner

Marissa J. Detschel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-16, 19 and 20 is/are allowed.
- 6) ☒ Claim(s) 17 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claim 17 have been considered but are moot in view of the new ground(s) of rejection. The new grounds of rejection under 35 U.S.C. 103(a) are set forth below with respect to newly found prior art of Johs et al. (USPN 6,483,586) in view of Cohn et al. (USPN 5,076,696).

Claim Objections

Claims 11 and 17 are objected to because of the following informalities:

As to claim 11, line 1, the preamble of the claim reads "An elliptical cavity for the detection of surface scattered light" and the new part of the amended claim reads "and a quarter wave plate at a tilting angle that permits tilting of the wave plate with respect to a beam axis." It is understood from the applicant's disclosure that this quarter wave plate is not actually a part of the elliptical cavity itself, but instead is located outside of the elliptical cavity. Examiner suggests changing the preamble of this claim to "An elliptical cavity assembly for the detection of surface scattered light" so the assembly itself comprises the truncated elliptical cavity and the quarter wave plate as claimed.

As to claim 17, line 5, the phrase "drive mechanism to rotate the substrate track and support structures..." appears in this line and should read

"drive mechanism to rotate the substrate;
track and support structures..."

As to claim 17, the second to the last line of the claim, the limitation "the optical path" appears in this line, and there is insufficient antecedent basis for this.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

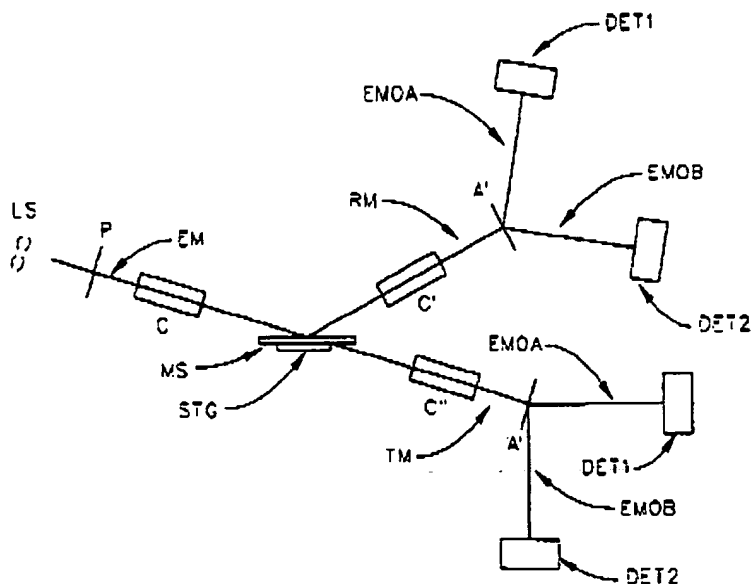
This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johs et al. (USPN 6,483,586) in view of Cohn et al. (USPN 5,076,696).

Johs discloses an optical measuring system (Figure below) comprising:
a laser (LS) configured to generate an intensity stabilized light beam;
an optical system (P) for directing the beam (EM) to a spot on a substrate (MS) being evaluated;
a detection system configured to receive and detect light reflected from the substrate (MS);

said detection system including polarizers (A') to convert the reflected beam to s and p polarized light (EMOA and EMOB) and detectors (DET 1 and DET 2) to read the information content of the s and p polarized reflected beams; and,

compensators (C, C') to compensate for unwanted phase shifts between the s and p beams introduced by other optical components. (column 12, lines 13-32 and 54-20)



The polarizer (A') of the system of Johs can be a Wollaston prism polarizer (column 13, lines 41-51 and Figure 3). A Wollaston prism polarizer splits an input beam into two separate beams with different directions of polarization (i.e. an s and a p polarized beam.)

Johs does not disclose the use of a drive mechanism to rotate the substrate or a track and support structure to bring about relative motion of the light beam relative to the surface of the sample. Cohn discloses the use of a translation-rotation stage to

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support a sample to be analyzed in an ellipsometric measuring system utilizing a compensator (column 7, lines 1-2). The stage rotates and translates the substrate with respect to the light beam relative to the surface of the sample. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the translation-rotation stage of Cohn as the stage to support the sample in Johs device, resulting in a rotational and translational movement of the sample as it is being measured, in order to achieve surface reflection measurements over the entire sample and not just one spot.

Allowable Subject Matter

Claims 1-16, 19, and 20 are allowed.

Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to claims 1, 9, and 18, the prior art of record, taken alone or in combination, fails to disclose or render obvious the use of an elliptical cavity positioned adjacent to a substrate to capture light scattered from the substrate in an optical measuring system for evaluating a substrate, in combination with the rest of the limitations of claims 1, 9, and 18.

As to claim 11, the prior art of record, taken alone or in combination, fails to disclose or render obvious the use of a quarter wave plate tilting assembly in an

elliptical cavity assembly for the detection of surface scattered light in an analyzer, in combination with the rest of the limitations of claim 11.

As to claims 12, 13, and 19, the prior art of record, taken alone or in combination, fails to disclose or render obvious the use of a quarter wave plate that is tilted with respect to an axis of a measurement beam in an optical measuring system for evaluating a substrate, in combination with the rest of the limitations of claims 12, 13, and 19.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

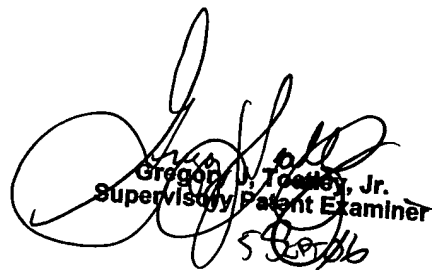
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa J. Detschel whose telephone number is 571-272-2716. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marissa J. Detschel
August 30, 2006

mjd


Gregory J. Toatley, Jr.
Supervisory Patent Examiner
5/20/06